The total number of strokes reported was 1,803 and the approximate value of the stock killed was $129,955. The number of strokes was about two and a half times as great as during the preceding year and the value of the stock killed was nearly three times as great. The increase in the number of live stock killed is directly proportional to the increase in the number of buildings struck.

The six States having the greatest number of fatal cases are as follows: Iowa, New York, Nebraska, Illinois, Ohio, and Wisconsin.[1] It will be observed that all these States are occupied by farmers' mutual insurance companies and it is to them that we are indebted for the completeness of the reports.

TABLE 2.—*Live stock in the fields killed by lightning during* 1899.

States.	Cattle.	Horses.	Mules.	Pigs.	Sheep.	Goats.	Value.	No. of strokes.
Alabama	2	4	5	.....	.....	.....	$635	8
Arizona	9	7	.....	.....	.....	.....	685	9
Arkansas	1	.....	.....	.....	.....	.....	15	1
California	4	3	.....	.....	11	.....	233	4
Colorado	34	24	1	.....	.....	.....	2,375	32
Connecticut	35	.....	.....	.....	.....	.....	930	15
Delaware	1	4	.....	.....	.....	.....	320	4
District of Columbia	.....	.....	.....	.....	.....	.....	.....	.....
Florida	2	3	.....	.....	.....	.....	205	3
Georgia	1	1	7	8	.....	.....	540	7
Idaho	.....	.....	.....	.....	.....	.....	.....	.....
Illinois	236	105	5	24	1	.....	16,061	164
Indiana	30	30	1	4	5	.....	3,749	33
Iowa	483	87	2	19	67	.....	20,120	333
Kansas	90	19	1	.....	.....	.....	3,525	29
Kentucky	11	9	1	.....	62	.....	1,436	16
Louisiana	.....	.....	.....	.....	.....	.....	.....	.....
Maine	19	1	.....	1	.....	.....	440	15
Maryland	46	19	.....	2	3	.....	3,142	31
Massachusetts	33	3	.....	2	4	.....	930	14
Michigan	22	26	.....	12	90	.....	2,879	39
Minnesota	31	10	.....	13	3	.....	1,517	28
Mississippi	2	3	1	.....	.....	.....	330	5
Missouri	114	28	7	.....	.....	.....	7,191	64
Montana	5	3	.....	.....	.....	.....	410	5
Nebraska	220	41	1	45	.....	.....	9,763	176
Nevada	.....	1	.....	.....	.....	.....	75	1
New Hampshire	21	3	.....	4	8	.....	689	16
New Jersey	46	10	1	6	85	.....	2,147	36
New Mexico	7	1	.....	.....	.....	53	315	5
New York	249	53	.....	7	144	.....	12,412	193
North Carolina	18	1	4	5	12	.....	851	16
North Dakota	10	15	.....	.....	.....	.....	1,205	10
Ohio	160	75	.....	39	127	.....	13,008	143
Oklahoma and Indian Territory	.....	.....	1	.....	.....	.....	50	1
Oregon	.....	.....	.....	.....	.....	.....	.....	.....
Pennsylvania	151	33	.....	6	70	.....	6,023	85
Rhode Island	4	1	.....	.....	.....	.....	135	4
South Carolina	2	2	2	.....	.....	.....	350	6
South Dakota	52	37	.....	5	4	.....	4,045	55
Tennessee	21	8	9	.....	4	.....	1,580	18
Texas	.....	1	.....	.....	.....	.....	75	1
Utah	.....	.....	.....	.....	.....	.....	.....	.....
Vermont	32	5	.....	.....	.....	.....	1,010	17
Virginia	22	11	.....	8	43	.....	1,869	20
Washington	.....	.....	.....	.....	.....	.....	.....	.....
West Virginia	31	4	2	.....	33	.....	1,802	24
Wisconsin	129	22	.....	28	40	.....	4,808	116
Wyoming	.....	1	.....	.....	.....	.....	75	1
Total	2,381	714	51	238	816	53	$129,955	1,803

MEXICAN CLIMATOLOGICAL DATA.

Through the kind cooperation of Señor Manuel E. Pastrana, Director of the Central Meteorologic-Magnetic Observatory, the monthly summaries of Mexican data are now communicated in manuscript, in advance of their publication in the Boletin Mensual. An abstract, translated into English measures, is here given, in continuation of the similar tables published in the MONTHLY WEATHER REVIEW since 1896. The barometric means have not been reduced to standard gravity, but this correction will be given at some future date when the pressures are published on our Chart IV.

[1] The relative area of the States will be found on page 397 of the MONTHLY WEATHER REVIEW for September, 1900.—ED.

Mexican data for October, 1900.

Stations.	Altitude.	Mean barometer.	Temperature. Max.	Temperature. Min.	Temperature. Mean.	Relative humidity.	Precipitation.	Prevailing direction. Wind.	Prevailing direction. Cloud.
	Feet.	*Inch.*	°*F.*	°*F.*	°*F.*	%	*Inch.*		
Durango (Seminario)	6,243	24 05	87.8	38.7	65.7	50	0.25	wsw.	sw.
Guanajuato	6,640	23.70	85.1	48.2	66.6	52	0.23	ne.	e.
Leon (Guanajuato)	5,934	24.30	82.6	44.6	65.3	54	0.17	nw.	e.
Magdalena (Sonora)	2,618	.....	.....	.....	70.0	.....	.....	s.	ne.
Mazatlan	25	29.87	91.9	71.1	82.4	75	1.30	nw.	nw.
Merida	50	29.88	93.2	63.0	78.8	78	0.83	ne.	e.
Mexico (Obs. Cent.)	7,472	23.07	77.0	44.6	61.5	58	0.12	n.	ne.
Morelia (Seminario)	6,401	24.00	79.0	45.7	61.5	74	1.00	w.	ne.
Tampico	38	29.95	90.9	59.0	78.8	74	4.80	se.	.....

CUMULUS CLOUDS AT THE BAYONNE, N. J., FIRE.

By JOHN H. EADIE, Voluntary Observer, Bayonne, N. J.

I have read with much interest Mr. W. H. Mitchell's account of the great fire at the Standard Oil works in this place in July last, and can vouch for the accuracy of his description, although he describes several details which his close proximity enabled him to see and which were not witnessed by others. There is one matter, however, which he writes of with apparent confidence that I am not yet convinced is correct, viz, the formation of cumulus clouds over the column of smoke. I, too, saw these so-called clouds, although at a greater distance than Mr. Mitchell's station. I could not divest myself of the opinion that they were due to the illumination of the upper surface of the dense smoke column by the slanting rays of the sun, as they were not observed except where the smoke was densest. The column was very black, but it gave the appearance of being solid enough to reflect sunlight near its upper part.[1] No other clouds were near at the time and I could not avoid thinking that the so-called cloud owed its origin to the cause mentioned.

DRIFT ICE AND THE THEORY OF OCEAN CURRENTS.[2]

By REGINALD A. DALY.

The extraordinary smoothness of the sea covered by drift ice, even when the pans are widely spaced, is truly astonishing to one making his first voyage in such waters. His sailing ship may be favored with a fresh breeze, and yet the ocean surface be quite level, save for the minute rippling characteristic of a small pond ruffled by a summer breeze; ground swell does not exist. It is a matter of common knowledge among the fishermen of the Atlantic Labrador coast that the Labrador current, or "tide," as they invariably express it, often shows high velocity, although its surface for a length of 1,000 miles and a breadth of from 100 to 300 miles is covered with loose pan ice. At such times the wind is or has been strong and from a northerly quarter. We are justified in believing that the pans act as the sails which, in ice-free waters, are represented by wind waves. Floes and pans project above the surface from 1 to 20 feet or more. They may be expected to exert a coercive force on the film of relatively fresh water derived from the melting of the ice in contact with the heavier salt water beneath. According with the behavior of such "dead water," as described by Nansen and others, the light surface layer will tend to move *en masse* and in the direction of common pull exercised by the wind-driven masses of ice. By reason of friction the motion will be com-

[1] The Editor would suggest that observers favorably situated should observe and report whether in any case smoke clouds can so reflect sunlight as to appear like vapor clouds.

[2] Extracted from Science, November 2, 1900, Vol. XII, p. 688.